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| | Filing Date | 03/15/2004 |
| | First Named Inventor | Kenji Inoue |
| | Art Unit | 1771 |
| | Examiner Name | E. Cole |
| | Attorney Docket Number | KIN99USA |
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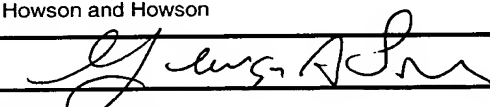
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Remarks

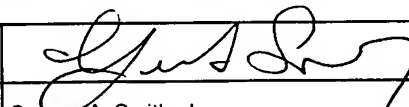
Amended Brief on Appeal in response to Notification of Non-Compliant Appeal Brief dated 10/18/2006.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

| | | | |
|--------------|---|----------|--------|
| Firm Name | Howson and Howson | | |
| Signature |  | | |
| Printed name | George A. Smith, Jr. | | |
| Date | 10/24/2006 | Reg. No. | 24,442 |

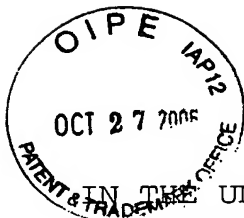
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No.: 10/800580
Applicant: Kenji Inoue
Filed: 03/15/2004
TC/A.U.: 1771
Examiner: E. Cole
Docket No.: KIN99USA
Customer No. 00270

Confirmation No: 1657

AMENDED BRIEF ON APPEAL

MAIL STOP Appeal Brief -
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George A. Smith
October 24, 2006

Sir:

This appeal is from the final rejection in the Office Action dated March 7, 2006, and this amended brief is being filed in response to a notice of non-compliant appeal brief dated October 18, 2006.

A check for the fee of \$500.00 was attached to the original Appeal Brief. The Commissioner is hereby requested to charge any deficiency in the fee due with the filing of this paper, or credit any overpayment, to our Deposit Account, No. 08-3040.

Serial No. 10/800580
Filed 03/15/2004
Amended Brief on Appeal

I. REAL PARTY IN INTEREST

The real party in interest is the inventor's assignee, Ichikawa Co., Ltd., a Japanese corporation, located at 14-15, Hongo 2-chome, Bunkyo-ku, Tokyo, Japan.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF CLAIMS

The pending claims are claims 1 and 2. Both claims have been finally rejected. The applicant appeals from the rejection of both of claims 1 and 2.

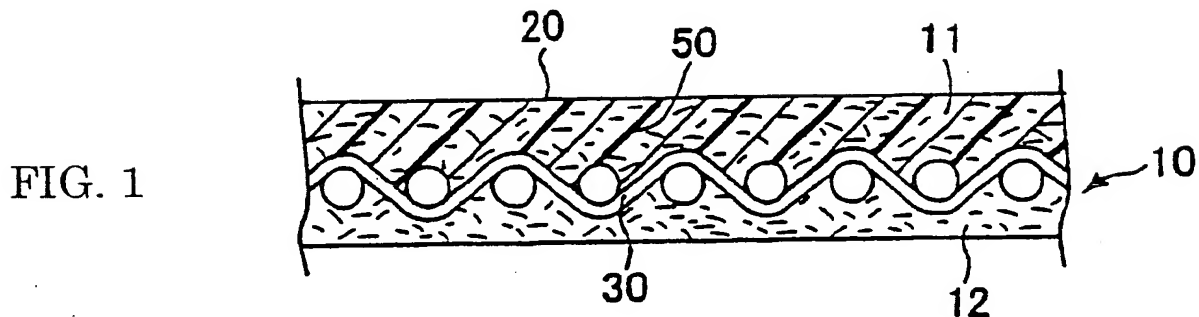
IV. STATUS OF AMENDMENTS

An amendment under 37 C.F.R. § 41.33(a) was filed after the filing of the notice of appeal to obviate the rejection under 35 U.S.C. §112. In an advisory action dated October 18, 2006, the examiner agreed to enter the amendment. The claims in the appendix are in the form in which they would appear after entry of the amendment.

V. SUMMARY OF CLAIMED SUBJECT MATTER

As shown in FIG. 1, which is reproduced below, the transfer belt 10 comprises a base body 30, a wet paper web side layer 11, having a wet paper web side surface which is

contacted by a paper web, and a machine side layer, which is contacted by a press roll.¹



The wet paper web side layer 11 is formed from an elastic section 50 and a fiber body 20.² At least part of the fiber body 20 is exposed on the wet paper web side surface of the elastic section 50³, and at least the part of the fiber body exposed at the surface of the elastic section 50 is hydrophilic⁴.

The exposed part of the fiber body 20 can be made hydrophilic by a treatment applied to the surface of the exposed part of the fiber body.⁵

¹Specification, paragraph 0024, page 5, line 30 - page 6, line 2.

²Specification, paragraph 0024, page 6, lines 2-4.

³Specification, paragraph 0024, page 6, lines 5-12.

⁴Specification, paragraph 0025, page 6, lines 13-15.

⁵Specification, paragraph 0027, page 6 line 32- page 7, line 6.

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VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

(a) Rejection under 35 U.S.C. §112.

The claims were rejected as indefinite under 35 U.S.C. §112, on the ground that they do not particularly point out and distinctly claim the subject matter which applicant regards as the invention.

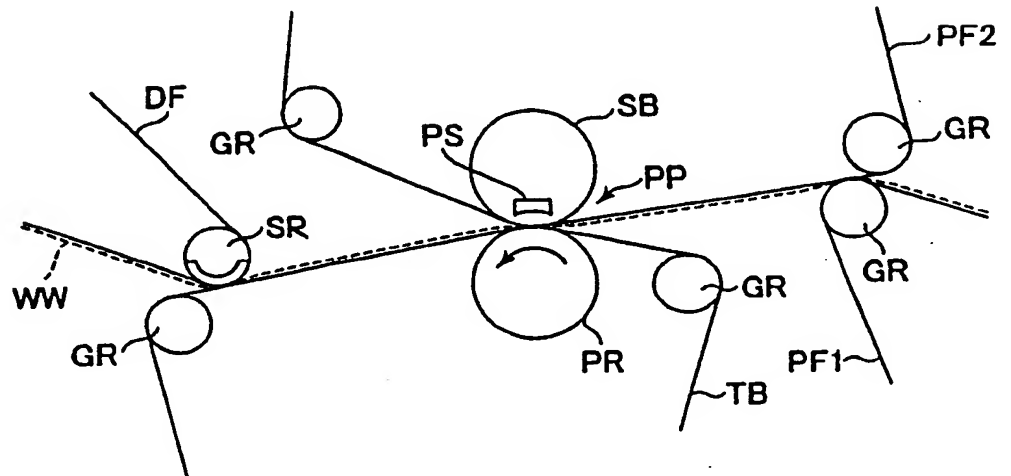
(b) Rejection under 35 U.S.C. §103.

Both of claims 1 and 2 were rejected under §103 as unpatentable over JP 2001-89990 (JP' 990) in view of published U.S. patent application 2002/0060057 (Westerkamp).

VII. ARGUMENT

In a papermaking machine, as depicted in FIG. 9, reproduced below, a wet paper web WW, represented by a broken line, is typically moved through a part of the machine known as a "press part" (PP), which consists of a press roll PR, a fixed press shoe PS opposed to the press roll, and a shoe press belt SB, that travels around the shoe, between the shoe and the press roll.

FIG. 9
PRIOR ART



The wet paper web WW is first carried on a press felt PF1, transferred to a second press felt PF2, and carried by press felt PF2 into the press part PP,⁶ where water is squeezed out of the wet paper web WW and taken up by the press felt PF2. In the press part, the wet paper web WW is transferred to a transfer belt TB, which carries the wet paper web away from the press part. In a subsequent stage,

⁶Specification, paragraph 0004, page 2, lines 5-6.

the wet paper web is taken off the transfer belt and transferred to a dryer fabric DF by a suction roll SR.⁷

A transfer belt has two conflicting requirements. It is important for the wet paper web to be attached to the surface of the transfer belt immediately after the wet paper web moves out of the press part.⁸ On the other hand, release of the wet paper web from the transfer belt at the suction roll is also important.⁹

The invention is a transfer belt that has been found to exhibit superior performance in achieving both of these objectives. As demonstrated by the test results appearing in the table at page 14 of the Applicant's specification, compared to the prior art, the invention is capable of achieving good attachment and good transfer over a wider range of dryness of the paper web as it exits the press part.

As mentioned previously with reference to in FIG. 1, the transfer belt according to the invention comprises a base body 30, a wet paper web side layer 11 and a machine side layer 12.

The machine side layer comprises a batt layer composed of staple fibers. These fibers are intertwined with the machine side of the base body 30.¹⁰

⁷Specification, paragraph 0007, page 2, lines 27-31.

⁸Specification, paragraph 0010, page 3, lines 19-22.

⁹Specification, paragraph 0008, page 3, lines 1-5.

¹⁰Specification, paragraph 0033, page 8, lines 19-22.

The base body 30 is typically a woven fabric.¹¹ The wet paper web side layer 11 is formed from an elastic section 50 and a fiber body 20.¹² At least part of the fiber body 20 is exposed on the surface of the elastic section 50. That is, fibers appear on the surface of the elastic section 50, but may or may not protrude from the surface.¹³

At least the parts of the fiber body exposed at the surface of the elastic section 50 are hydrophilic, meaning that they attract and/or hold, water. For example, a hygroscopic fiber is hydrophilic because moisture absorption by the fiber causes the fiber to have an affinity for water.¹⁴

The fiber body 20 can be composed of materials such as nylon, rayon, cotton or wool¹⁵, which are inherently hydrophilic, or may be made hydrophilic by a treatment such as Mercerization, resin treatment, sputtering by ionizing radiation, or glow discharge processing.¹⁶ Only the exposed portions of the fiber body 20 need to be hydrophilic, but

¹¹Specification, paragraph 0044, page 11, line 30.

¹²Specification, paragraph 0024, page 6, lines 2-4.

¹³Specification, paragraph 0024, page 6, lines 5-12.

¹⁴Specification, paragraph 0025, page 6, lines 13-20.

¹⁵Specification, paragraph 0027, page 6, lines 27-30.

¹⁶Specification, paragraph 0027, page 7, lines 7-11.

in practice the entire fiber body 20 will ordinarily be hydrophilic.¹⁷

(a) Rejection under 35 U.S.C. §112

The amendment recently filed eliminates the term "high molecular weight," which had previously qualified the term "elastic section" in claim 1. The language "high molecular weight" is in common use in the field of papermaking belt manufacture, and appears in the claims of numerous patents, including for example, 6,440,274, 6,331,231, and 6,325,897. With the entry of the amendment, the definiteness of the term "high molecular weight" is no longer an issue.

(b) Rejection under 35 U.S.C. §103 on JP2001-89990 in view of Westerkamp

Both of claims 1 and 2 were rejected under §103 as unpatentable over JP 2001-89990 (JP' 990) in view of published U.S. patent application 2002/0060057 (Westerkamp). JP '990 describes a transfer belt in which the wet paper web side layer comprises an elastic section 2 and a fiber body 3, and either the elastic section or the fiber body comprises a hydrophobic material which functions to break the thin water film formed between the wet paper web and the transfer belt after the transfer belt carrying the web moves out of the press part of the papermaking

¹⁷Specification, paragraph 0027, page 6 line 32- page 7, line 6.

machine. Westerkamp describes a papermaking belt in which the surface can be made to have hydrophilic, hydrophobic, anti-static, or stain-releasing properties by appropriate physical or chemical surface treatments (Westerkamp, paragraph 0029). According to the rejection, it would have been obvious to one of ordinary skill in the art to have applied a hydrophilic coating to the surface of the belt of JP'990, as taught by Westerkamp.

Westerkamp's paragraph 0029 in no way suggests that the physical or chemical surface treatment is applied only to a part of the surface 21 of fiber layer 20. Thus, paragraph 0029 would not be understood as teaching anything other than that a hydrophilic, hydrophobic, anti-static or stain-releasing character is imparted to the entire surface of the fiber layer. Moreover, as seen in Westerkamp's drawings, surface 21 is continuous. Finally, as mentioned in Westerkamp's paragraph 0029, the surface charge potentials of the fiber layer 20 are to be "harmonized" with those of the fiber suspension to be dewatered. Thus, there is no suggestion that the surface treatment can or should be applied in such a way that the surface is other than uniform insofar as its hydrophilic or hydrophobic character is concerned.

At issue in this case is the proper interpretation of JP '990. Does it teach that the surface of the belt can be uniformly hydrophobic, or is it essential that only part of the surface be hydrophobic?

Briefly, the Applicant's position is that non-uniformity is an essential feature of JP '990; either the fibers 3 or the elastic material 2, but not both, are hydrophobic. Westerkamp's approach is to treat a surface so that its properties are uniform, that is, that the surface is uniformly hydrophobic, or uniformly hydrophilic. The approaches in JP '990 and Westerkamp are antithetical, and therefore there is no basis for combining the teachings of the two references.

According to the Examiner, JP '990 teaches that both elements, the fabric 3 and the elastic material 2, can be hydrophobic and that the entire surface can be hydrophobic.¹⁸ The Examiner reasons that since JP '990 does not teach a non-uniform surface material, "to combine the teachings of Westerkamp to JP '990 would not destroy the material of JP '990." In other words, the Examiner considers the teachings of Westerkamp to be applicable to the belt of JP '990.

The Applicant does not agree with the assertion that JP '990 does not teach a non-uniform surface material. On the contrary, non-uniformity is an essential feature in JP '990. The English translation of JP '990, which was supplied by the PTO, is not particularly clear, and one is tempted by some of the language in the translation to conclude that uniform hydrophobicity is an option. However, we submit that the correct interpretation is that,

¹⁸Paragraph 7 of final Office action

in all cases, only a part of the surface in JP '990 is hydrophobic.

Paragraphs 0018-0020 of the translation are the pertinent paragraphs, and read as follows:

"[0018] Either said wet paper web installation side 2b or surface outcrop 3' is formed for a hydrophobic material, and the part which keeps away water, and the part which condenses water are prepared in the shape of distribution, and it constitutes so that the water screen may not be made between a wet paper web and a wet paper web installation side. The surface free energy of this hydrophobic wet paper web installation side 2b or surface outcrop 3' is desirable at the point that the force in which the following [30 dyn/cm (erg/cm²)] keep away water becomes strong.

"[0019] In order to make said surface outcrop 3' into hydrophobicity, the whole surface organizer 3 may be formed for a hydrophobic material. Although fluorine fiber is mentioned as a hydrophobic material, even if it processes other fiber with silicon or fluorine water repellent and it gives hydrophobicity, hydrophobicity may be given by the approach of making hydrophobic oil, such as silicon powder and a silicone oil, mixing in fiber.

"[0020] Moreover, in order to make said wet paper web installation side 2b into hydrophobicity, the whole macromolecule elastic member 2 may be formed for a hydrophobic material. There are a fluoro-resin, silicon resin, etc. as a hydrophobic material. Before the material of the macromolecule elastic member 2 hardens also in this case (while holding a fluidity), hydrophobicity may be given by mixing fluorine oil, a silicone oil, fluorine powder and silicon powder. In addition, the ratio of the hydrophobic part to the

surface area of a wet paper web installation side is 10 - 90%, and is suitably changed according to the class of paper to manufacture."

The Examiner has cited paragraphs 0019 and 0020 as teaching "that both elements [3 and 2b] can be hydrophobic and that the entire surface can be hydrophobic." This conclusion is not supportable for several reasons.

First, insofar as element 3 is concerned, this element is referred to as a "surface organizer." While it is not clear what "surface organizer" means, the reference number 3 appears twice in Figures 1 and 2 of JP '990, and in each case the lead line points to an embedded fiber. Thus, the language in paragraph 0019 that states that "the whole surface organizer 3 may be formed for (of?) a hydrophobic material," apparently means only that the embedded fibers are hydrophobic, not that the entire surface is hydrophobic.

Second, although paragraph 0020 uses the language "in order to make the wet paper web installation side 2b into hydrophobicity," it goes on to say explicitly that the "ratio of the hydrophobic part to the surface area of a wet paper web installation side is 10-90%," clearly indicating that the surface is never entirely hydrophobic. Moreover, paragraph 18 distinguishes the wet paper web installation side 2b from surface outcrop 3', and thus the area of the installation side 2b is the area of the elastic material only, which is the total area of the web-contacting side excluding the area of the outcrops.

Third, although the Examiner has stated that JP '990 teaches that both elements can be hydrophobic, this statement does not tell the whole story. Indeed each of the elements can be hydrophobic. However, nowhere does JP '990 say that both elements can be hydrophobic at the same time. The entire thrust of JP '990, and especially the opening sentence of paragraph 0018, are to the contrary.

In summary, therefore, JP '990 does not teach that the surface of the belt can be uniformly hydrophobic. Rather, it is essential that only part of the surface be hydrophobic. There is nothing in JP '990 or Westerkamp that would motivate one skilled in the art to apply the teachings of Westerkamp, specifically Westerkamp's hydrophilic treatment, to the product of JP '990.

The Applicant's invention is characterized by a wet paper web side layer comprising an elastic section and a fiber body, at least a part of which is exposed and hydrophilic. Neither JP '990 nor Westerkamp teaches this, and there is no basis for combining the two references. It follows that the rejection under §103 should be reversed.

(c) No separate argument for claim 2

No separate argument is being presented in support of dependent claim 2.

(d) JP '990 does not anticipate claim 1

The Examiner has not asserted that claim 1 is anticipated by JP '990, but has instead applied an

obviousness rejection under §103 based on two references. Nevertheless, since the question may arise as to whether or not the claimed invention is patentable over JP '990 considered by itself, it should be observed that JP '990 does not relate to hydrophilicity at all. In the automated translation, at page 3, lines 6 and 7, reference is made to a "side of hydrophobicity" and to a "side of non-hydrophobicity." However, non-hydrophobicity is not the same thing as hydrophilicity. In JP '990, so long as the surface has hydrophobic areas, water will be repelled from these hydrophobic areas and condense in other areas on the surface of the belt. It is unnecessary that the other areas be hydrophilic, and nothing in JP '990 implies that there are hydrophilic areas.

The U.S. patent that corresponds to JP '990 is Patent 6,319,365. There, the term "side of non-hydrophobicity" was translated as "hydrophilic side," at col. 3, line 13, and again at column 12, line 26. This is a mistranslation of the Japanese text. Moreover, nowhere in Patent 6,319,365 is there an explanation of why a portion of the belt should have a hydrophilic character. A person skilled in the art, reading the U.S. patent, would realize that hydrophilicity is unnecessary to the proper operation of the belt in Patent 6,319,365, and would recognize that the term "hydrophilic" was used loosely as a convenient way to say "non-hydrophobic." A person reading Patent 6,319,365 with the level of understanding of one skilled in the art of papermaking belt design would not infer that the term

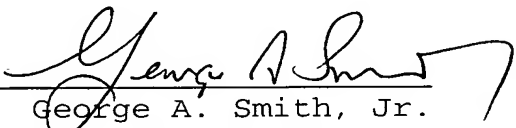
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signifies a property by which a fiber body attracts and/or holds water, which is the definition of "hydrophilic" and "hydrophilicity" set forth in paragraph 0025 of the Applicant's specification.

(e) Conclusion

The rejection under §112 has been obviated, and the rejection under §103 should be reversed for the reasons stated in part VII (a). The two references cited in support of the rejection under section 103 are not properly combinable.

Respectfully submitted,
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VIII. CLAIMS APPENDIX

1. A wet paper transfer belt for use in the press part of a closed draw papermaking machine, comprising a base body, a wet paper web side layer having a wet paper web side surface, and a machine side layer, wherein said wet paper web side layer comprises an elastic section and a fiber body, at least a part of the fiber body is exposed on said wet paper web side surface, and at least the exposed part of the fiber body is hydrophilic.

2. A wet paper web transfer belt as claimed in claim 1, wherein hydrophilic treatment is applied to the surface of the exposed part of the fiber body.

3-4 (cancelled).

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IX. EVIDENCE APPENDIX

None

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X. RELATED PROCEEDINGS APPENDIX

None